



Missouri Department of Natural Resources' Response to Comments from Andrew Bracker
March 2006

Comment: In lieu of a more formal comment, this is a comment on the mercury soil Tier 1 level for indoor inhalation pathway. For all soil types, these levels are at or below many laboratory detection limits. It is my understanding that the previous level was 0.6 mg/kg under CALM. It is also my understanding that the February 2005 levels and proposed 2006 levels (unchanged) are based upon a formula and data assumptions borrowed from the Texas Natural Resources Conservation Commission. Among the assumptions made was a soil pH of 4.9, whereas the Texas standard offered variation based on different soil pH levels. In my opinion, the February 2005 mercury levels for indoor inhalation do not accurately reflect the actual risks for the majority of soil conditions found in Missouri. The mercury levels should be suspended and the CALM standard should be applicable for an interim period pending recalculation of new mercury levels for soils either incorporating a neutral pH soil value, or offering reasonable variation for actual soil pH conditions, without requiring the user to progress to Tier 2 analysis.

DNR Response: Thank you for the comment. To address this concern, RAM Group developed the attached memo dated February 2, 2006. The memo recommends the use of K_d values corresponding to a pH of 6.8 (neutral pH is 7.0). The department plans to change the K_d values for metals and K_{oc} values for the organics that ionize. These organics are also presented in the memo.

The above adjustment will result in a significant increase in the K_d value for mercury from 0.04 to 52. This change will result in less volatilization of mercury and hence an increase in the soil target levels protective of inhalation of vapors. Additionally a footnote will be added to the table listing the K_{oc} values to indicate that the default K_{oc} values shown in the table correspond to a pH of 6.8. It is important to note that in Tier 3 the person performing the risk assessment may use site-specific pH values.

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